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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/733,393
Filing Date: December 12, 2003
Appellant(s): GUINGO ET AL.

Terry W. Kramer
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 4/23/2008 appealing from the Office action mailed 10/22/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,751,191	Kanekar et al.	7-2004
2002/0145981 A1	Klinker et al.	10-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 22-26 are rejected under 35 U.S.C. 101 because the claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

Descriptive material can be characterized as either “functional descriptive material” or “non-functional descriptive material.” Both types of “descriptive material” are non-statutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)

Merely claiming non-functional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that

the claims for an algorithm in *Benson* were unpatentable as abstract ideas because “[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.”).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated by

Klinker et al. (hereinafter **Klinker**) US Publication NO.: 2002/0145981 A1.

Klinker teaches:

Claim 19: A method of measuring per-flow traffic delay between two routers having synchronized clocks, comprising the steps of: a) calculating, at each of the routers, a key uniquely and invariantly identifying a corresponding packet in the flow (Figures 1C-2 & 4B-6 & 15-19 and Par 10 & 15 & 53 & 70; trace route, analyzing packet information, standard routing protocols and because the header of IP packets are used to identify a corresponding packet in the flow); b) selecting, at each of the routers using the key, a packet to be monitored (Figures 1C-2 & 4B-6 & 15-19 and Par 10 & 15; trace route, and analyzing packet information); c) recording, at each of the routers, a timestamp upon selection of each packet (Figures 3 & 7 and Par. 64-65

& 89; round trip time, network latency and server response time); and
d) subtracting the timestamps to determine the delay for the packet
(Figures 3 & 7 and Par. 64-65 & 89; round trip time, network latency
and server response time).

Claim 20: wherein multiple packets are monitored
and an average delay for the multiple packets is calculated (Figures 3 & 7
& 9 and Par. 64-65 & 89; round trip time, path optimization, traffic
analysis).

Claim 21: wherein if a key cannot be calculated within a given time
interval indicating lost packets the calculating step is stopped (Par. 70;
time to live (TTL)).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that
form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by
another filed in the United States before the invention by the applicant for patent or (2) a patent
granted on an application for patent by another filed in the United States before the invention by the
applicant for patent, except that an international application filed under the treaty defined in section
351(a) shall have the effects for purposes of this subsection of an application filed in the United States
only if the international application designated the United States and was published under Article 21(2)
of such treaty in the English language.

Claims 22-26 are rejected under 35 U.S.C. 102(e) as being anticipated by

Kanekar et al. (hereinafter **Kanekar**), Patent NO.: US 6751191 B1.

Claim 22: A system for measuring per-flow traffic delay between two
routers having synchronized clocks (Figure 11A-11B & 12A & Col. 10 lines 54-
65), comprising: means for calculating, at each of the routers, a key for every

packet in the flow, wherein the key uniquely and invariantly identifies a corresponding packet in the flow (Figure 11B & Col. 3 lines 34-49 & Col. 13 lines 37-41; packet headers); means for selecting, at each of the routers using the key, a packet to be monitored (Col 3 lines 34-49 & Col. 13 lines 37-41; packet headers within IP networks); means for recording, at each of the routers, a timestamp upon selection of each packet (Figure 12C & 13A-B & Col 3 lines 34-49 & Col. 13 lines 37-41; packet headers and time to live (TTL)); and means for subtracting the timestamps to determine the delay for the packet (Col. 10 lines 54-65 & Col. 13 lines 22- 26; forwarding delay time, synchronizing tasks and synchronized state information).

Claim 23: wherein the routers are edge routers in a virtual router network (Figures 1-3 and Col. 1 lines 10- 12; master and slave routers).

Claim 24: wherein one of said edge routers is selected as a master edge router and packet filtering information is aggregated and correlated at said master edge router (Figure 13A-13B and Col. 13 lines 37-41 & Col. 14 lines 30-59 & Col. 2 lines, 25-48 & Col. 8, lines 15-40; forwarding engine tables, shared IP and Mac addresses).

Claim 25: wherein one of said edge routers is selected as a master edge router and the aggregation and correlation processes of packet filtering information are distributed among the edge routers, the results being sent and compiled at said master edge router (Figure 13A-13B & Col. 14 lines 30-59 &

Col. 2 lines, 25-48 & Col. 8, lines 15-40; forwarding engine tables, shared IP and Mac addresses and master active).

Claim 26: having a service manager to receive said packet filtering information (Col. 2, lines 25-48, where the default gateway reads on the limitation of a service manager).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1- 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kanekar et al.** (hereinafter **Kanekar**), Patent NO.: US 6751191 B1; and further in view of **Klinker et al.** (hereinafter **Klinker**), U.S. Publication No.: 2002/0145981 A1.

Regarding **claim 1**, **Kanekar** teaches a) configuring said virtual interfaces with a respective real-time flow measurement meter, said respective real-time flow measurement meter having a uniform behavior with respect to a real-time flow measurement, (Figure 13A- 13B and Col. 14 lines 14- 40; layer tables, actively forwarding incoming and outgoing packets and forwarding engine tables) b) determining, at said virtual interfaces and in dependence upon a flow monitoring rule set consistent for all of said virtual interfaces, whether a packet belongs to a flow to be monitored; (Figure 13A- 13B and Col. 14 lines 14- 40; layer tables, actively forwarding incoming and outgoing packets and

forwarding engine tables) c) accounting, responsive to the packet belonging to a flow to be monitored, the packet in a flow record corresponding to that flow maintained by said respective real-time flow measurement meter; (Figure 13A-13B and Col. 14 lines 14- 40; layer tables, actively forwarding incoming and outgoing packets and forwarding engine tables).

Kanekar also teaches aggregating the flow records from all virtual interfaces at a master virtual interface for transmission to a collector (Figure 13A- 13B and Col. 14 lines 14- 40; layer tables, actively forwarding incoming and outgoing packets and forwarding engine tables).

Kanekar does not appear to explicitly disclose identifying if a specified flow record abides to terms of a corresponding, service level agreement pertaining to said specified flow record.

However, **Klinker** discloses maintaining and monitoring a traffic service level for data communicated by a computer network; from source to destination (Figure 2 and Abstract).

Kanekar and **Klinker** are analogous art because they are from the same field of endeavor of forwarding and monitoring traffic flow within a network.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of **Kanekar** and **Klinker** before him or her, to incorporate aggregating the flow records from all virtual interfaces at a master virtual interface for transmission to a collector, as disclosed by **Kanekar**, with

maintaining and monitoring a traffic service level for data communicated by a computer network, as disclosed by **Klinker**.

The motivation for doing so would have been to allow the use of monitoring traffic within a given network and comparing actual flow of traffic to standards set by a service level agreement; to provide a more cost efficient way for utilizing the network.

Therefore, it would have been obvious to combine **Kanekar** with **Klinker** to obtain the invention as specified in the instant claim.

Claim 2: (canceled)

Regarding **claim 3**, **Kanekar-Klinker** further discloses an initial step of selecting one of the virtual interfaces as the master virtual interface (Figures 3 & 5 & 9 11A- 12D and Col. 8 Lines 15-40; determining which is master and slave).

Regarding **claim 4**, **Kanekar-Klinker** further discloses wherein the step of selecting the master virtual interface is done by polling each of the virtual interfaces to determine which one best satisfies a selection criteria (Col. 8 lines 15-40; the polling is conducting inherently because it is mentioned in lines 26-31 that the first router to come up will have the greater capacity for handling incoming and outgoing packets).

Regarding **claim 5**, **Kanekar-Klinker** further discloses wherein the selection criteria includes CPU usage, traffic handling capability and memory capacity (Col. 8 lines 26-31; reads on the three limiting features above

because all three feature will determine inherently the router with the greater capacity for incoming and outgoing packets).

Regarding **claim 6, Kanekar-Klinker** further discloses following the selecting step, initiating, by the master virtual interface, distribution of the rule set to the other virtual interfaces (Col. 2 lines 27-48 & Col. 8 lines 15-40; utilization of Internet Protocol (IP)).

Regarding **claim 7, Kanekar-Klinker** further discloses following the selection step, by the master virtual interfaces, collecting aggregated flow records from the other virtual interfaces (Figures 9 & 13A-B and Col. 8 lines 15-40; spanning tree databases, forwarding engine tables).

Regarding **claim 8, Kanekar-Klinker** further discloses wherein the aggregated flow records are sent to the collector by the master virtual interface (Col. 8, lines 15-18; master active slave functions on standby).

Regarding **claim 9, Kanekar-Klinker** further discloses wherein collecting aggregated flow records is performed serially (Figures 9 & 13A-B and Col. 8 lines 15-40; spanning tree databases, forwarding engine tables).

Regarding **claim 10, Kanekar-Klinker** further discloses wherein collecting aggregated flow records is performed in parallel (Figures 9 & 13A-B and Col. 8 lines 15-40; spanning tree databases, forwarding engine tables).

Regarding **claim 11, Kanekar-Klinker** further discloses wherein the aggregated flow records are provided to the collector using either a push or a pull

collector operation (Col. 8, lines 15-40; reads on this limitation because all actions fall under either a push or pull operation).

Regarding **claim 12, Kanekar-Klinker** further discloses wherein a service manager initiates the triggering selection process by sending a new or updated rule set to the master (Col. 2 lines 25-48 and Col. 8 lines 15-40; utilization of Internet Protocol (IP), default gateway and master active slave functions on standby).

Regarding **claim 13, Kanekar-Klinker** further discloses wherein the service manager receives aggregated flow records from the collector (Figure 13A-13B and Col. 2 lines 25-48 & Col. 8 lines 15-40 & Col. 14 lines 30-59; spanning tree databases, forwarding engine tables and the default gateway).

Regarding **claim 14, Kanekar-Klinker** further discloses means for configuring said virtual interfaces with a respective real-time flow measurement meter, said respective real-time flow measurement meter having a uniform behavior with respect to a real-time flow measurement (Figure 13A- 13B and Col. 14 lines 14- 40; layer tables, actively forwarding incoming and outgoing packets and forwarding engine tables); means at said virtual interface for determining in dependence upon a flow monitoring rule set consistent for all of said virtual interfaces, whether a packet belongs to a flow to be monitored (Figure 13A- 13B and Col. 14 lines 14- 40; layer tables, actively forwarding incoming and outgoing packets and forwarding engine tables);

means for accounting, responsive to the packet belonging to a flow to be monitored, the packet in a flow record corresponding to that flow maintained by said respective real-time flow measurement meter (Figure 13A- 13B and Col. 14 lines 14- 40; layer tables, actively forwarding incoming and outgoing packets and forwarding engine tables); and means for aggregating the flow records from all virtual interfaces at a master virtual interface for transmission to a collector (Figure 13A- 13B and Col. 14 lines 14- 40; layer tables, actively forwarding incoming and outgoing packets and forwarding engine tables).

Regarding **claim 15, Kanekar-Klinker** further discloses wherein one of said virtual interfaces is selected as the master virtual interface (Figures 3 & 5 & 9 11A- 12D and Col. 8 Lines 15-40; determining which is master and slave).

Regarding **claim 16, Kanekar-Klinker** further discloses wherein the master virtual interface has means to distribute rule sets to other virtual interfaces (Col. 2 lines 27-48 & Col. 8 lines 15-40; utilization of Internet Protocol (IP)).

Regarding **claim 17, Kanekar-Klinker** further discloses wherein the master virtual interface has means to collect aggregated flow records from the other virtual interfaces and to report the aggregated flow records to a collector (Figures 9 & 13A-B and Col. 8 lines 15-40 Col. 8 lines 15-18; spanning tree databases, forwarding engine tables and master active slave functions on standby).

Regarding **claim 18**, **Kanekar-Klinker** further discloses having a service manager to initiate a Selection of the master virtual interface and to collect aggregated flow records from the collector (**Figure 13A-13B and Col. 2 liens 25-48 & Col. 8 lines 15-40 & Col. 14 lines 30-59; spanning tree databases, forwarding engine tables, default gateway, utilization of Internet Protocol (IP), and master active slave functions on standby**).

(10) Response to Argument

Applicant's arguments filed have been fully considered but are not persuasive. In substance, the applicant argues: 1) that **claims 22- 26** qualify under at least one of the statutory categories in 35 U.S.C. § 101; 2) **Klinker** is silent regarding timestamps and packet delay; 3) that none of the sections in **Klinker** mention a unique and invariant key identifying a packet; 4) the system of **Klinker** simply retrieves packet information from the received data packet, without including a step to calculate a key identifying a corresponding packet in the flow; 5) the system of **Klinker** does not select a packet using a calculated key; the system of **Klinker** indiscriminately analyzes traffic, without first selecting a packet to be monitored using a key; 6) **Kanekar** does not disclose the subtraction of timestamps for the purposes of determining delay; 7) the system of **Kanekar** does not calculate a key identifying a packet; 8) **Kanekar** does not disclose a means for selecting, at each of the routers using the key, a packet to be monitored; 9) that **Kanekar-Klinker** does not teach aggregating the flow records from all virtual interfaces at a master virtual interface for transmission to a collector; 10) the system of **Kanekar-Klinker** does not include a step of transmission to a collector.

In response to 1), the Examiner respectfully disagrees. The system (including the routers) recited in **claim 22- 26** is interpreted as being software per se. therefore the claims still fail to meet the statutory requirements under 35 U.S.C. § 101.

In response to 2), the Examiner respectfully disagrees. **Klinker** discloses round trip time, also known as round trip *delay* time, (RTT) and service levels associated with one or more performance metrics. Where RTT is used for calculating optimal routes within a network, by determining--which done inherently through subtracting the times, or *timestamps*-- the time it takes for a message/packet to go from point 'A' to point 'B' and back again. Therefore, **Klinker** meets this limitation.

In response to 3), the Examiner respectfully disagrees. **Klinker** meets this limitation by disclosing packet headers (*keys*) that uniquely and invariantly identify a packet.

In response to 4), the Examiner respectfully disagrees. **Klinker** meets this limitation by disclosing packet headers (*keys*), which are uniquely *calculated* to identify them, and a passive flow analyzer, which monitors the flow of packets within the system.

In response to 5), the Examiner respectfully disagrees. The order of the steps (i.e. "...without *first* selecting a packet...") is not positively recited within the claim, however, **Klinker** still meets this limitation by disclosing the *selected* packets as being all the packets, and monitoring them through their respective packet headers (*keys*) with a passive flow analyzer.

In response to 6), the Examiner respectfully disagrees. **Kanekar** discloses forwarding packets with minimum *delay times* and synchronizing port states and forwarding *delay time(s)*, as stated earlier it is inherent to determine the delay through subtracting *timestamps* (see also response to 2). Therefore, **Kanekar** meets this limitation.

In response to 7), the Examiner respectfully disagrees. **Kanekar** meets this limitation by disclosing observation of packets and obtaining information from their headers (keys).

In response to 8), the Examiner respectfully disagrees. **Kanekar** meets this limitation by adding every packet to an entry in the corresponding table, as the *selected packets*, through the packet headers, which act as the key (see also response to 5).

In response to 9), the Examiner respectfully disagrees. **Kanekar-Klinker** disclose shared set of interfaces, as the *master interface*, and further discloses forwarding/*transmitting* packets to corresponding tables/databases and/or memory units. Therefore, **Kanekar-Klinker** meets this limitation.

In response to 10), the Examiner respectfully disagrees. **Kanekar-Klinker** meets this limitation by disclosing forwarding/routing to routing tables and databases.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Art Unit: 2151

M.A. 7/2/2008

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Supervisory Patent Examiner, Art Unit 2144

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